

Lake Michigan Biodiversity Conservation Strategy: Providing on-line access to results and supporting information

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State of Lake Michigan
Conference
September 27, 2011

Context

Strategies

Factors

Threats

Goal

Healthy,
Sustainable
Lake
Michigan
Ecosystem

Summary of Session

Overview

- Context
- Intended Outcomes

Developing Biodiversity Conservation Strategies for Lake Michigan and Lake Erie: summary

Developing the Great Lakes Information Management and Delivery System--summary

Break-out Sessions

- Three topics
- Two sessions of roughly 25 minutes each

Developing Biodiversity Conservation Strategies for Great Lakes Erie and Michigan



“...working with a **broad network**...developing strategies for the **restoration and conservation** of the **native biodiversity** and **ecosystem function**...”

“primary output... **biodiversity conservation strategies** that will **complement** and **be incorporated into** the **Lakewide Area Management Plans (LaMPS)**”

With funding from:



40 years of protecting health and the environment
United States Environmental Protection Agency



Environment
Canada

Environnement
Canada

Completed Biodiversity Conservation Strategies



THE SWEETWATER SEA

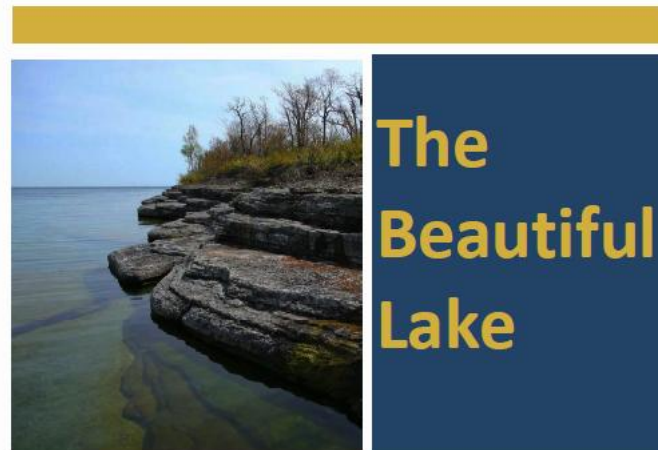
AN INTERNATIONAL BIODIVERSITY
CONSERVATION STRATEGY FOR LAKE HURON

TECHNICAL REPORT

The Nature Conservancy
Environment Canada
Ontario Ministry of Natural Resources
Michigan Department of Natural Resources and Environment
Michigan Natural Features Inventory
Michigan Sea Grant
The Nature Conservancy of Canada

Prepared by the Lake Huron Biodiversity Conservation Strategy Core Team
in cooperation with the Lake Huron Binational Partnership

June 2010



The Beautiful Lake

A Bi-national Biodiversity Conservation Strategy for
Lake Ontario



Prepared by the Lake Ontario Bi-national Biodiversity Conservation Strategy Working Group
in cooperation with the U.S. – Canada Lake Ontario Lakewide Management Plan

April 2009



Conservation Action Planning (CAP)



Project Scope: Lake Michigan



Aquatic Biodiversity Targets

- Open Water Benthic and Pelagic Ecosystem
- Nearshore Zone
- Native Migratory Fish
- Coastal Wetlands

Terrestrial Biodiversity Targets

- Islands
- Coastal Terrestrial Systems
- Aerial Migrants
- (Colonial Nesting Waterbirds)

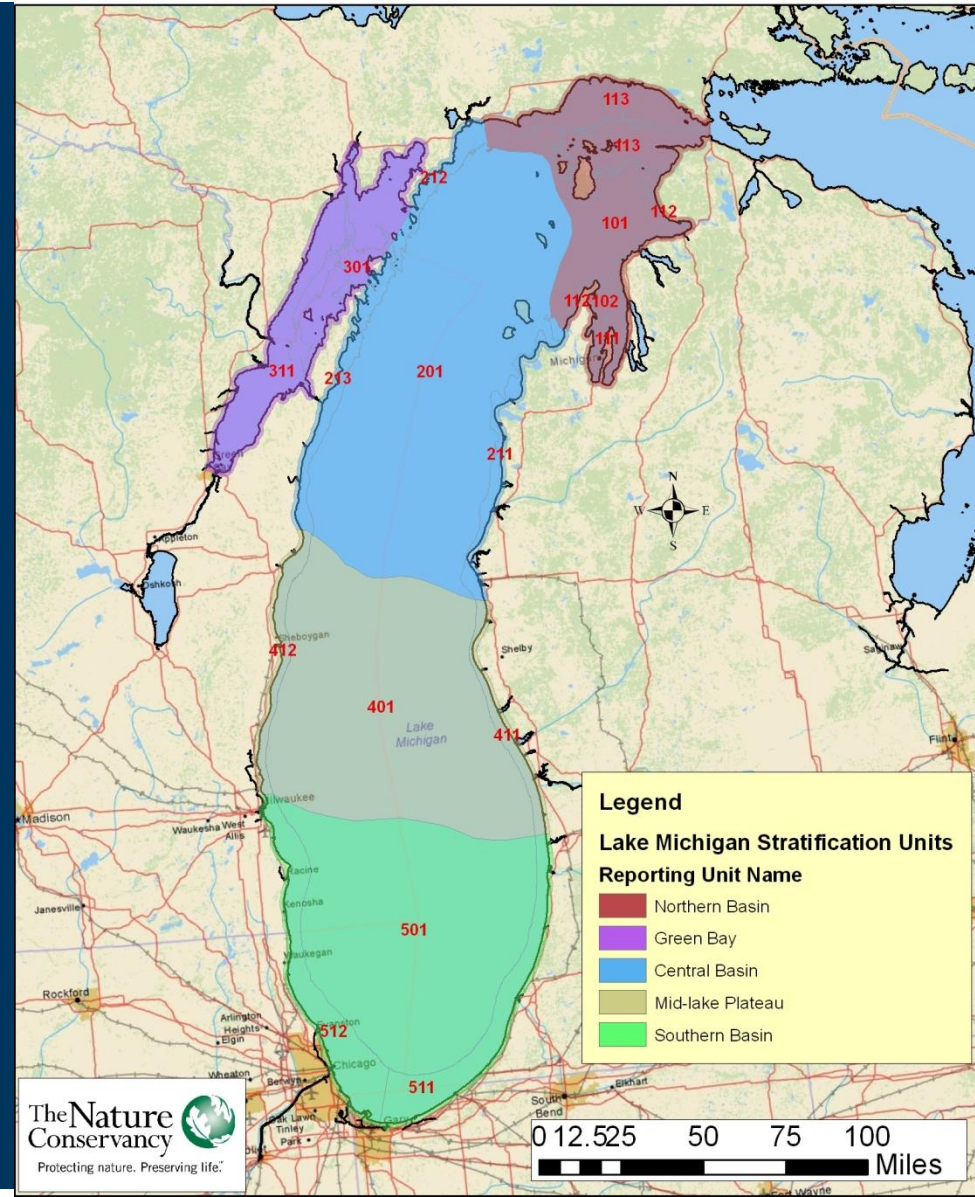
Lake Michigan Stratification Units

Reasons to Stratify:

- Reduce complexity
- Regional familiarity

5 Reporting Units

17 Assessment Units



Vision Statement

Vision:

We envision a healthy Lake (Michigan/Erie) that sustains the full array of natural ecosystems and the services they provide. A resilient Lake (Michigan/Erie) is sustained by collaborative, ecosystem-based management, now and into the future.

Project Timeline

Project Structure Oct '10 – Mar '11

- Core Team
- Steering Committee
- Agreements

Biodiversity Assessment Jan – October '11

- **Compiling Information**
- **Project Scope**
- **Viability Assessment**
- **Threat Assessment**

Conservation Plan Oct '11 – Apr '12

- **Conservation Strategies**
- **Implementation Recommendations**

Final Products Jun '11 – Sep '12

- **Final Report**
- ~~Summary Report~~
- **Data/Information/ Map products**

Great Information, Great Decisions:

Developing a Great Lakes information management and delivery system

Mary Khoury

Aquatic Ecologist/
Conservation Planner

State of Lake Michigan
Michigan City, IN
September 27, 2011

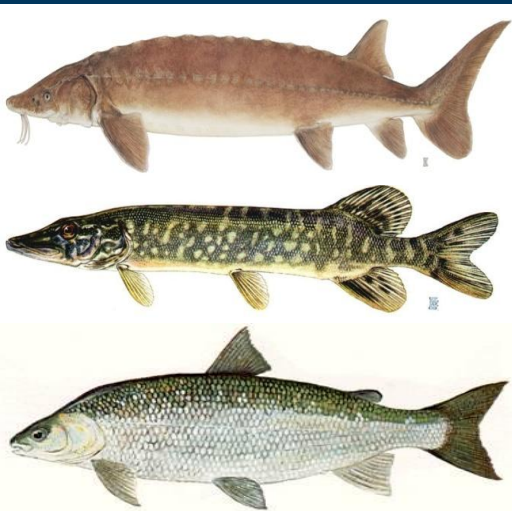


Overview

- ❖ Why an information management and delivery system (IMDS)?
- ❖ What is the IMDS that we are designing?
- ❖ What is our progress to date?
- ❖ Why are we talking about it to you today?

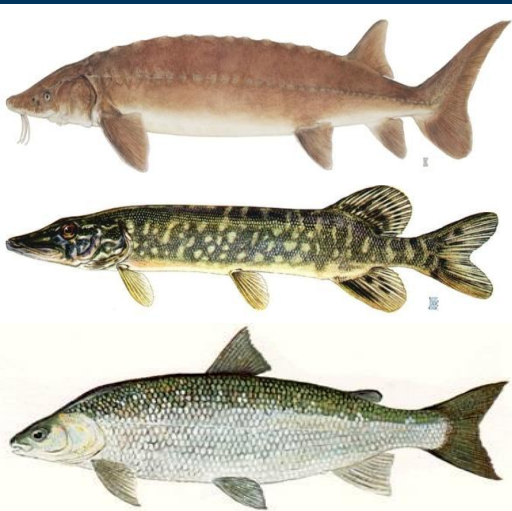
Imagine

You are a coastal zone manager responsible for many conservation values – what if you could . . .



The Problem

We lack an information supply chain that supports core decisions needed to achieve strategic conservation results at a landscape-scale.



TNC's Great Lakes Project

Objective: To ensure the Great Lakes watershed is among

Goals: the most effectively managed ecosystems on Earth.

- 1) Build a Network of Conservation Lands & Waters
- 2) Restore the Health of Working Lands and Waters
- 3) Create, Share and Leverage Science and Knowledge

Project Teams:

- Watershed Health
- Food Web Restoration
- Climate Change Adaptation
- Coastal & Nearshore Health
- Northern Forests
- Aquatic Invasive Species

Role of USFWS Landscape Conservation Cooperatives

Science and Technology

- Data Development
 - Downscaled climate data
 - Complete NWI Data
- Knowledge Development
 - ID Climate vulnerable species
 - Climate adaptation recommendations
- Information Delivery
 - Great Lakes IMDS

Information Development and Delivery

Social

Decision Making

- Shared vision
- Communication
- Coordination
- Collaboration

Logistical

- Protection
- Land and Water Management
- Policy

Conservation Delivery

LCC Role

What is an IMDS?

It is NOT...

- A collection of GIS maps or data
- A single decision support tool (e.g., fish passage)
- Designed to answer one specific question, or decision

What is an IMDS?

An **information supply chain** supporting core decisions of strategic habitat conservation

1. What are realistic desired conditions?
2. What are current conditions; is there a problem?
3. Can we, and how can we, strategically achieve our desired conditions?
4. Are our actions leading to desired improvements?

Great Lakes Information Management and Delivery System



Knowledge Network



Visualization



Data Catalog



Decision Tools



Project Tracking



Assess and Adapt

Knowledge Network

Purpose: Provide users with conservation knowledge needed to effectively interpret the data available in the other IMDS modules and promote informed conservation decisions and communication.

GLIMDS Modules:

- Great Lakes Information Management and Delivery System (GLIMDS)
- You are here** Knowledge Network
- Visualization
- Data Catalog
- Decision Tools
- Project Tracking
- Assess and Adapt

Knowledge Network Home > [breadcrumb 1](#) > [breadcrumb 2](#)

Search for Relevant Information in the Knowledge Network

Quick Links

- [quick link 1](#)
- [quick link 2](#)
- [quick link 3](#)

Major Ecosystems ↔ **Major Human Activities** ↔ **Major Conservation Strategies**

[click here to learn more](#)

Welcome to the Knowledge Network
KN tagline or purpose statement?

Decision Tools

Brief description

Getting Started with the Knowledge Network


- [How to use the Knowledge Network](#)
- [How the Knowledge Network links to other IMDS Modules](#)
 - [Visualization](#)
 - [Decision Tools](#)
 - [Project Tracking](#)
 - [Assess and Adapt](#)

Data Visualization


Purpose: Allow users to query and find existing visualizations relevant to the conservation of the Great Lakes ecosystem.

Great Lakes Information Management and Delivery System (GLIMDS)


GLIMDS Modules:




Knowledge Network




Visualization




Data Catalog



Decision Tools



Project Tracking



Assess and Adapt

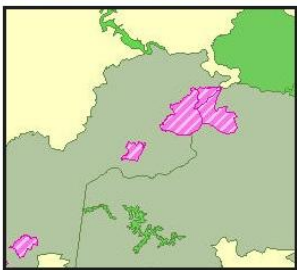
GLIMDS Home People Partners Contact Us Help

Quick Links

- [Link 1](#)
- [Link 2](#)
- [Link 3](#)
- [etc...](#)

[Visualization Home](#) > [breadcrumb1](#) > [breadcrumb2](#)

Visualization Category: Forests



Brief description of the Forests visualization

~~~~~

~~~~~

~~~~~

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About the Visualization Module

Find Visualizations


[Search All](#)

Main Categories:

- [Wetlands](#)
- [Forests](#)
- [Tributaries](#)

Contribute

Share your visualization with the Great Lakes conservation community



click here

Getting Started with Visualization

.....

- [How to use Visualization](#)

Linkages to GLIMDS modules:

- [Knowledge Network](#)
- [Decision Tools](#)
- [Data Catalog](#)

.....

- [How you can contribute](#)

Data Catalog

Purpose: Allow users to efficiently locate and obtain data relevant to the conservation of the Great Lakes ecosystem.

Great Lakes Information Management and Delivery System (GLIMDS)

GLIMDS Modules:

Knowledge Network

Visualization

Data Catalog

Decision Tools

Project Tracking

Assess and Adapt

GLIMDS Home People Partners Contact Us Help

Quick Links

- [Link 1](#)
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- [Link 3](#)
- [etc...](#)

[Data Catalog Home](#) > [breadcrumb1](#) > [breadcrumb2](#)

Find Data

Locate **geospatial** or **tabular** data within the Great Lakes Region

Contribute Data

Share your **geospatial** or **tabular** data with others in the **Great Lakes** conservation community

Other Resources

How Data Catalog links to other GLIMDS modules
[Knowledge Network](#) • [Decision Tools](#) • [Visualization](#)

Links to relevant websites outside of GLIMDS

Getting Started with the Data Catalog

.....

- [How to use the Data Catalog](#)

Linkages to GLIMDS modules:

- [Knowledge Network](#)
- [Decision Tools](#)
- [Visualization](#)

• [How you can contribute](#)

Decision Tools

Purpose: Allow users to efficiently identify, locate, and compare models and decision tools, which support assessment, forecasting, and planning for Great Lakes ecosystem conservation.



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Your online hub for tools and projects for innovative interdisciplinary coastal-marine spatial planning and ecosystem-based management. Find and contribute new resources and ideas to grow this information bank for coastal and marine managers worldwide.

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Featured Project



MarineMap: Participatory Marine Spatial Planning Using a Web-based Open Source Tool

MarineMap (previously named Doris) is a web-based application used for designing marine protected areas (MPAs). Users with a password may view marine geospatial data layers, draw prospective MPAs, share these MPAs with other users (or keep them private), and assemble MPAs into arrays.
[MORE »](#)

Featured Tool



CommunityViz

CommunityViz is advanced yet easy-to-use GIS software designed to help people visualize, analyze and communicate about important land-use decisions.

[MORE »](#)

Featured Project

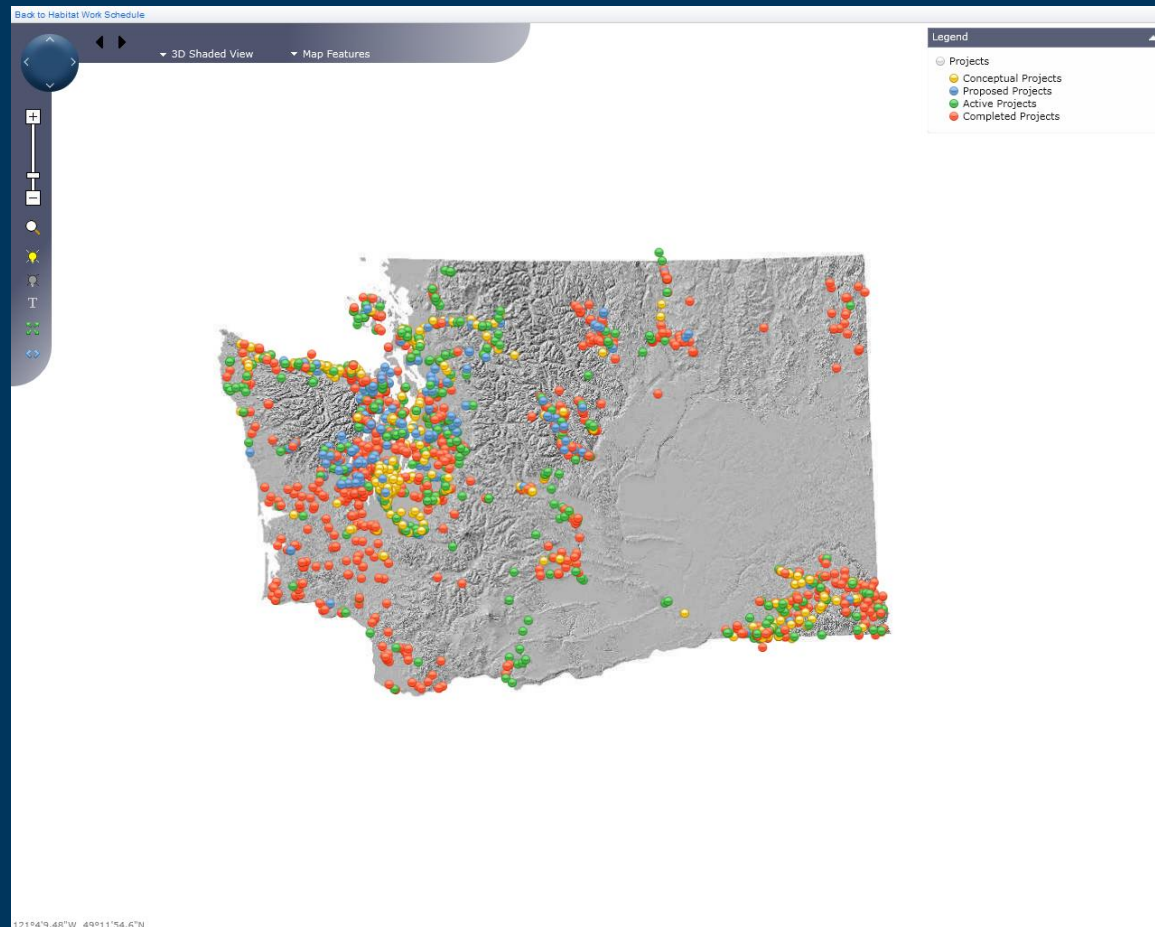


Improving Coastal Land Use Planning Through the Application and Evaluation of the Interoperability of Three Decision Support Tools

The Mission-Aransas National Estuarine Research Reserve (NERR) is within relatively undisturbed watersheds that support a healthy estuary with highly diverse habitats.
[MORE »](#)

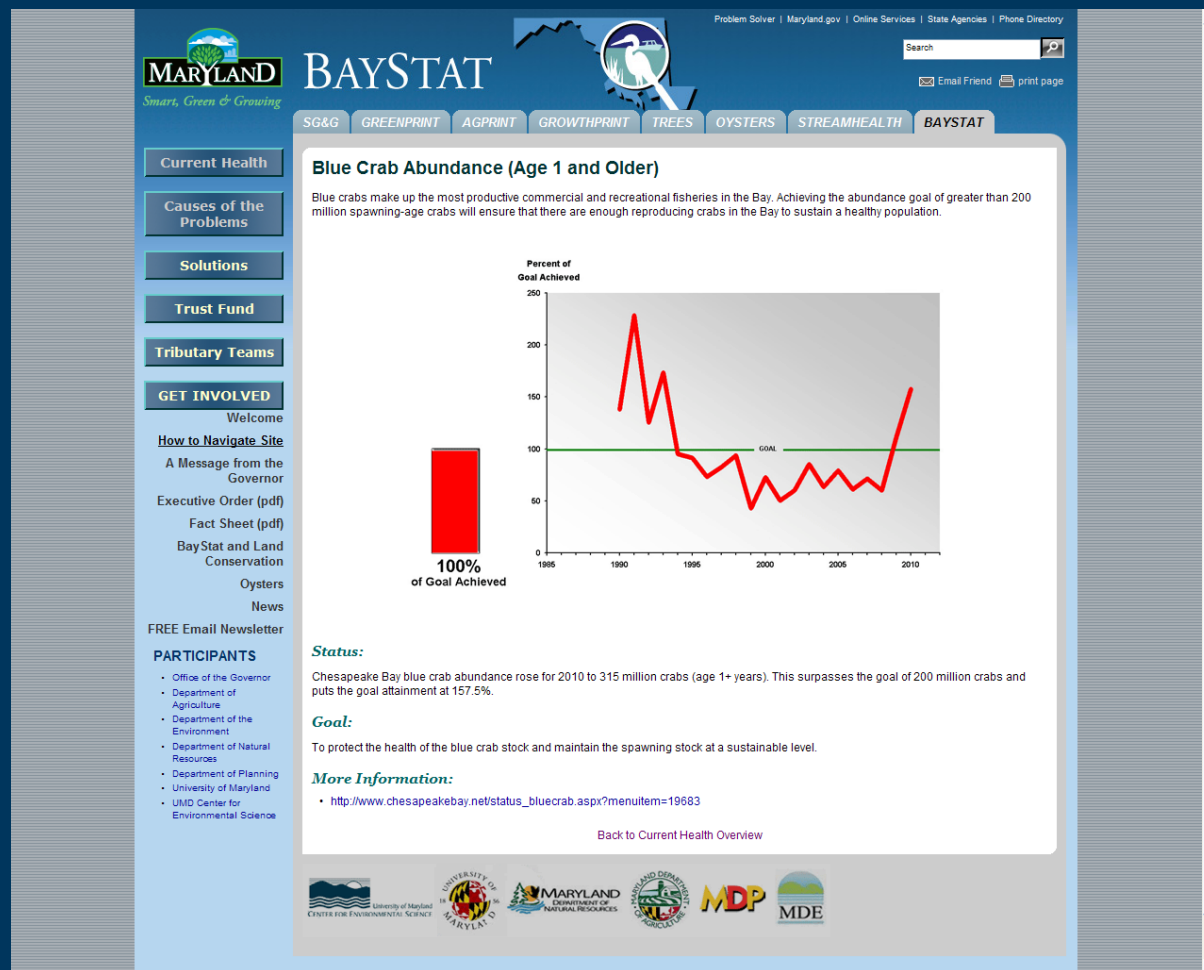
Project Tracking

Purpose: *Allow users to efficiently track and coordinate the implementation of conservation actions by providing mapped locations and the ability to query and **summarize** relevant project information within and across projects.*



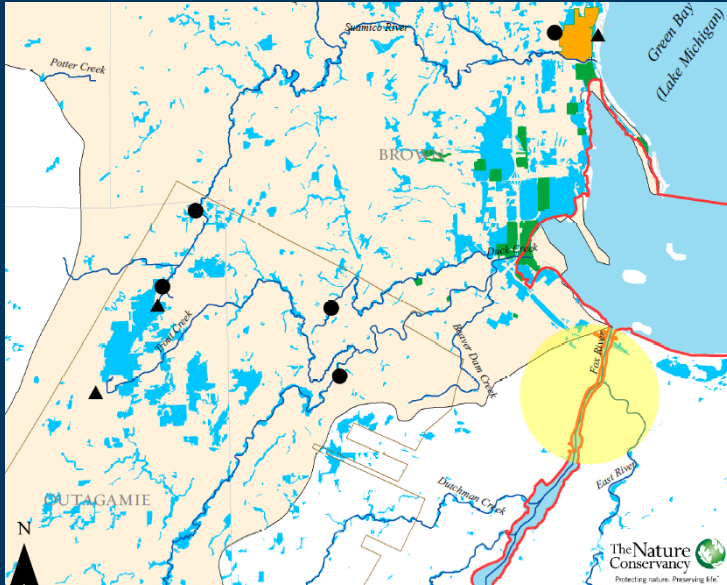
Assess and Adapt

Purpose: Allow users to locate and obtain relevant sets of status and trend indicators across related ecological attributes, human activities and conservation strategies/actions.



Green Bay Focal Strategies

- Stream Connectivity



Duck-Pensaukee Watershed

- Wetland mitigation



Progress to date

Phase I (2011): Design pilot scope and structure

- Define scope - *complete*
- Create system architecture - *underway*
- Develop Content – *underway*

Phase II (2012): Populate

Phase III (2013): Populate, Evaluate, and Create Plan for Long-term

Questions?



[http://conserveonline.org/workspaces/
great-lakes-project](http://conserveonline.org/workspaces/great-lakes-project)